REMARKS

Claims 17-25 are now in this case. Claims 11-16 have been canceled. The title has been amended as suggested by the Examiner. Claims 17, 18 and 19 have been amended to delete arguable process limitations. All claims have been rejected.

Claims 17-22 and 25 have been rejected under 35 U.S.C. Section 103 as obvious in view of Kimura Japanese Patent No. JP08181392A. These rejections are respectfully traversed.

It is well established that in order to make obvious a claimed invention, a prior patent must teach or suggest every limitation of the claim.

Claim 17 is directed toward a solder comprising "a plurality of chemical element layers"... "at least one of chemical element layers defining a binary solder, the binary solder having a first melting temperature." As the Examiner has acknowledged, Kimura does not teach or disclose this limitation.

Instead the Examiner argues that the limitation makes the claim a product by process claim and can therefore be disregarded. Applicants submit that the limitation and claim as amended are clearly not product by process. The limitation, for example, expressly defines the characteristics of the chemical element layer without regard to process. Similarly the recitation that the solder formed by the chemical element layers has a usage temperature which is substantially higher than the first melting temperature of the binary solder defines the characteristics of the solder. It does not define a process by which the solder is made. Accordingly, Kimura does not teach or suggest all limitations of claim 1 and therefore does not make obvious claim 17 or the remaining dependent claims.

Turning to claim 18, which depends on 17, the Examiner acknowledges that Kimura fails to disclose the additional limitation:

> the binary solder comprises a sequence of chemical layers comprising a single element of the binary solder, the chemical element layers forming a binary mixture close to the eutectic point of the chemical elements at the first melting temperature.

Here again the limitation defines the characteristics of the solder layers not the process by which the solder is made.

Similar considerations apply to 19, which depends on claim 17. Kimura fails to disclose:

> the chemical element layers are gold and tin which form a binary mixture close to the eutectic point of gold-tin at the first melting temperature.

This limitation defines the layers of the solder, not the process of making it. Kimura does not teach or suggest the limitation.

Claims 20, 21, 22 and 25 all depend on claim 17 and patentably distinguish from Kimura for the same reasons as claim 17.

Claims 23 and 24 have been rejected under Section 103 as unpatentable over Kimura in view of Japanese JP 08148496A to Tatsumi. However Tatsumi is cited only for disclosure of a platinum anti-oxidation layer. This does not remedy the deficiencies of Kimura in relation to claim 17. Since Kimura with or without Tatsumi does not make obvious claim 17, it does not make obvious dependent claims 23 and 24.

In view of the foregoing it is respectfully submitted that claims 17-25 as amended patentably distinguish all cited art. Accordingly this application now fully complies with the provisions of 35 U.S.C. section 103, and this case is now in condition for allowance. Reconsideration and favorable action in this regard is therefore earnestly solicited.

Respectfully submitted,

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AMENDED CLAIMS SHOWING CHANGES

IN THE SPECIFICATION

Title:

-- [Kinetically Controlled Solder Bonding] Kinetically Controlled Solder --

Claim 17:

17. A solder useful in kinetically controlled bonding of parts, the solder comprising:
a plurality of chemical element layers;
at least one of the chemical element layers defining a binary solder [for application to a first part], the binary solder having a first melting temperature; and
another one of the chemical element layers defining a solder quenching layer [for application to a second part];
wherein the solder formed by the chemical element layers has a usage temperature which is substantially higher than the first temperature of the binary solder.

Claim 18:

18. The solder according to claim 17, wherein the binary solder comprises a sequence of chemical element layers each comprising a single chemical element of the binary solder, the chemical element layers forming a binary mixture close to the eutectic point of the chemical elements [when melted] at the first melting temperature.

Claim 19:

19. The solder according to claim 18, wherein the chemical element layers are gold and tin which form a binary solder mixture close to the eutectic point of gold-tin [when melted] at the first melting temperature.